



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST-NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,365	01/14/2004	Philip Gray	830 010	3315
25191	7590	06/20/2007		
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			EXAMINER NEWAY, SAMUEL G	
			ART UNIT	PAPER NUMBER
			2626	
			MAIL DATE	DELIVERY MODE
			06/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/757,365	GRAY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Samuel G. Neway	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/14/04</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. This is responsive to the Application filed on 14 January 2004.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 8, and 18 – 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 8, and 18 – 20 are directed to a “computer program”. Program code is functional descriptive material and therefore non-statutory, absent being claimed in combination with the necessary hardware to enable the software to act as a computer component and realize its functionality.

Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program’s functionality to be realized, and is thus statutory.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 – 2, 7 – 8, 11 – 12, 15, and 18 rejected under 35 U.S.C. 102(e) as being anticipated by Ghitza et al. (USPN 6,609,092).

Claim 1:

Ghitza discloses a method of training a quality assessment tool (Abstract) comprising the steps of

dividing a database comprising a plurality of samples, each with an associated mean opinion score into a plurality of distortion sets of samples according to a distortion criterion (FIG. 1, item 102 and related text); and

training a distortion specific assessment handler for each distortion set, such that a fit between a distortion specific quality measure generated from a distortion specific plurality of parameters for a sample and the mean opinion score associated with said sample is optimized ("a mapping function is generated between subjective measures of audio signal quality, e.g., mean opinion score (MOS) measures, degradation MOS (DMOS) measures or other measures, and corresponding objective distortion measures, e.g., auditory speech quality measures (ASQMs), perceptual speech quality

Art Unit: 2626

measures (PSQMs) or other objective distortion measures, for known audio signals", col. 1, lines 56-65).

Claim 2:

Ghitza discloses a method according to claim 1, further comprising the steps of training the quality assessment tool, such that a fit between a quality measure generated from a non-distortion specific plurality of parameters together with a distortion specific quality measure for a sample, and the mean opinion score associated with said sample, is optimized ("the speech portion and the non-speech portions", col. 6, lines 28-36. Note that separating the speech into its speech and non-speech components is inherent and a non-distortion parameter).

Claim 7:

Claim 7 is similar in scope and content to claim 1 and is rejected with the same rationale.

Claim 8:

Claim 8 is similar in scope and content to claim 1 and is rejected with the same rationale.

Claims 11 – 12:

Claims 11 – 12 are similar in scope and content to claims 1 – 2 and are rejected with the same rationale.

Claims 15 and 18:

Claims 15 and 18 are similar in scope and content to claim 2 and are rejected with the same rationale.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 – 6, 9 – 10, 13 – 14, 16 – 17, and 19 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghitza et al (USPN 6,609,092) in view of Bayya et al (USPN 6,446,038).

Claims 3 and 13:

Ghitza discloses a method according to claim 1 in which the quality measure is representative of the quality of the speech perceived by an average user (Abstract) but it does not explicitly disclose the samples representing speech transmitted over a telecommunications network.

Bayya discloses a similar speech evaluating system in a communication system (Abstract).

It would have been obvious to one with ordinary skill in the art at the time of the invention to measure the quality of speech transmitted in a telecommunication system in Ghitza's method because Ghitza discloses that its "disclosed techniques are suitable for use with ... numerous alternative applications" (Ghitza, col. 2, lines 43-49).

Claim 4:

Ghitza discloses a method of assessing speech quality comprising the steps of

determining a dominant distortion type for a sample (FIG. 1, item 116 and related text);

combining a plurality of parameters specific to said dominant distortion type to provide a distortion specific quality measure for each sample (FIG. 1, item 116 and related text); and

generating a quality measure in dependence upon the distortion specific quality measure ("produce an objective distortion value which is indicative of speech quality", col. 4, lines 65-67).

Ghitza does not explicitly disclose the samples representing speech transmitted over a telecommunications network.

Bayya discloses a similar speech evaluating system in a communication system (Abstract).

It would have been obvious to one with ordinary skill in the art at the time of the invention to measure the quality of speech transmitted in a telecommunication system in Ghitza's method because Ghitza discloses that its "disclosed techniques are suitable for use with ... numerous alternative applications" (Ghitza, col. 2, lines 43-49).

Claim 5:

Ghitza and Bayya disclose a method according to claim 4, Ghitza further discloses the generating step comprising the sub step of combining a non-distortion specific plurality of parameters with said distortion specific quality measure to provide said quality measure ("the speech portion and the non-speech portions", col. 6, lines 28-

36. Note that separating the speech into its speech and non-speech components is inherent and a non-distortion parameter).

Claims 6 and 14:

Ghitza and Bayya disclose a method according to claim 4, Ghitza further discloses the quality measure is representative of the quality of the speech perceived by an average user (Abstract)

Claims 9 – 10:

Claims 9 – 10 are similar in scope and content to claims 4 – 5 and are rejected with the same rationale.

Claims 16 – 17:

Claims 16 – 17 are similar in scope and content to claims 2 – 4 and are rejected with the same rationale.

Claims 19 – 20:

Claims 19 – 20 are similar in scope and content to claims 2 – 4 and are rejected with the same rationale.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Chu et al (USPN 7,024,362) discloses a method for estimating mean opinion score or naturalness of synthesized speech. The objective measure has



a high correlation with mean opinion score such that a relationship can be formed between the objective measure and corresponding mean opinion score.

b. Kolligs et al (USPN 7,162,011) discloses method for measuring a quality of a line network using an in-service non-intrusive measurement device.

c. Hollier (USPN 5,794,188) discloses a telecommunications testing apparatus, which can provide a measure of the performance of telecommunications system, which matches the subjective human perception of the performance of the system.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Monday - Friday 8:30AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SN

*SN*



**DAVID HUDSPETH**  
**SUPERVISORY PATENT EXAMINER**  
TECHNOLOGY CENTER 2626